ANALYTICAL DATA QUALITY DELIVERABLE

PREPARED BY Stericycle Environmental Solutions HATFIELD, PENNSYLVANIA

SRCL WORK ORDERS: R16080012&44

FOR ALS

CLIENT CONTACT: Ron Mcleod

Data Deliverable Reviewed by: Vaugh O'Necle Date 9/6/16

Stericycle Environmental Solutions Data Deliverables Package

TABLE OF CONTENTS

SRCL Work Order(s): R16080012&44

SECTIONS

Title Page/Sample Key (Field ID vs. Laboratory ID) Chain of Custody Laboratory Chronicle Analytical Sample Results for All Parameters/Final Report

> Physical Testing Case Narrative/Non-Conformance Summary Report Internal Chain of Custody Physical Testing Raw Data (non-automated data) Physical Testing Accuracy and Precision Data/Method Blank Summary



Field Chain-of-Custody

R16080012

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REFERENCE COC NO.: T1-001-TUS

Knoxville, TN 37932

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

STODY RECO	ORD		PAGE _1_ OF	4
		Bill To:	CBI Federal Services	
			Accounts Payable	
Sample Shipment Date:	7/29/2016			
Laboratory Destination:	ALS-TUS via ALS-NY	•		
Laboratory Contact:	Ancy Sebastian	Report To:	CBI Federal Services	
Project Contact/Phone:	Joyce McGee 865-850-7306		Joyce McGee	
Carrier Waybill No.:	Lab Courier		2410 Cherabala Drive	

Sample Number	Analytical QC	Sample Type/ Description	Date/Time Collected	Container Type	Pre- servative	Requested Testing Program	Sample Notes / Expectations	Disposal Record
PY-1001L, PY-1001S		Slurry Waste Feed (liquid and solid fractions)	7/27/2016 1953	1L WM jar	Cool, 4C	Density, Moisture, Heat Content (Btu), Elemental Analysis (C,H,O,N,S)	Use caution in handling solid material - explosive propellant when dry. Sample will settle into solid/liquid phases.	
PY-1003L, / PY-1003S		Slurry Waste Feed (liquid and solid fractions)	7/27/2016 1953	250-mL Amber Boston Round	Cool, 4C		Weigh solid and measure liquid amount. Report grams and mt. of each separately as "S" (solid) and "L" (liquid).	
PY-1007		Auxiliary Fuel	7/27/2016 1940	250-mL Amber Boston Round	Cool, 4C		Flammable, Handle w Care. #2 Fuel Oil	
PY-1009		Auxiliary Fuel	7/27/2016 1940	250-ml. Amber Boston Round	Cool, 4C	% Ash	Flammable, Handle w Care.#2 Fuel Oil	
PY-1010		Scrubber purge water	7/27/2016 1930	250-mL Amber Boston Round	Cool, 4C		Concern a seer Off	

Special Instructions:							
Possible Hazard Identi	fication:			S	ample Disposal	:	
Non-haz:	Flammable: X	Poison B:	Unknown:		eturn to Client:	_ Disposal by Lab:	X Archive:
Turnaround Time:		Level of C	C Required:	or-ya			7801170.
Normal: _X_	Rush:	I.	/ II.	ш.		Project Specific: X	(talk to A. Sebastian)
1. Relinquished by:	J. MdGer, CB&I Federal		129 16	1. Received	by: Cure	Bordell -	Date: 29-JULY-16
2. Relinquished by:			1960 a			3040.01	Time: 21:00
2. Reiniquished by:	while the	Date: 😾	the same of the sa	2. Received			Date: 7/30/16
		Time: /5	540	Mist	men		Time: 1545
Comments: It samples	not received in good condi	tion contact Joyce McGee (865)-850-7306	immediately			

Relinguished Imm n. 75

Project Name/No: Picatinny Arsenal
Sample Team Member: J. McGee, G. Britt, D. Jarvis

Project Manager: Berani Halley

Purchase Order No.:

Required Report Date: Normal

m-N

8-2-16 09:39

R14080012

5

Reference COC Number: T1-001-TUS

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD (Cont.)

PAGE _2_ OF 4

Project Name/No.: Picatinny Arsenal Laboratory Destination: ALS-TUS

Sample	Analy	Sample Type/	Date/Time	Container	Pre-		Sample	Disposal
Number	QC	Description	Collected	Type	servative	Requested Testing Program	Notes / Expectations	Record
PY-1015		Ash Spiking Solution	7/27/2016 2005	250-mL Amber Boston Round	Cool, 4C			
PY-1016		Ash Spiking Solution	7/27/2016 2005	250-mi. Amber Boston Round	Cool, 4C		Use caution for %Ash, slowly drive off water. Critical measurement.	
PY-2001L, PY-2001S		Slurry Waste Feed (liquid and solid fractions)	7/28/2016 1700	1-L WM Glass		Density, Moisture, Heat Content (Btu), Elemental Analysis (C,H,O,N,S),	Use caution in handling solid material - explosive propellant when dry. Sample will settle into	
PY-2002L, PY-2002S		Slurry Waste Feed (liquid and solid fractions)	7/28/2016 1700	1-L WM Glass		Density, Moisture, Heat Content (Btu), Elemental Analysis (C,H,O,N,S),	solid/liquid phases. Weigh solid and measure liquid amount.	
PY-2005L, PY-2005S		Slurry Waste Feed (liquid and solid fractions)	7/28/2016 1700	250 mL WM jar	Cool, 4C	% Ash	Report grams and mL of each separately as "S" (solid) and "L" (liquid).	
Y-2006L, / Y-2006S		Slurry Waste Feed (liquid and solid fractions)	7/28/2016 1700	250 mL WM jar	Cool, 4C	% Ash		
PY-2007C		Quench Ash	7/28/2016 1800	120 mL WM jar	Cool, 4C	Density, Moisture Content		
Y-2008C	,	Quench Ash	7/28/2016 1800	120 mL WM jar	Cool, 4C	Density, Moisture Content		
Y-2011		Auxiliary Fuel	7/28/2016 1715	250-mL Amber Boston Round		Density, Heat Content (Btu)	Flammable, Handle w Care. #2 Fuel Oil	
Y-2012		Auxiliary Fuel	7/28/2016 1715	250-mL Amber Boston Round	Cool, 4C	Density, Heat Content (Btu)	Flammable, Handle w Care. #2 Fuel Oil	

R16080017 a

Reference COC Number: T1-001-TUS

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD (Cont.)

PAGE _3_ OF 4

Project Name/No.: Picatinny Arsenal

Laboratory Destination:

ALS-TUS

Sample	Analy	Sample Type/	Date/Time	Container	Pre-		Sample	Disposal
Number	QC	Description	Collected	Туре	servative		Notes / Expectations	Record
PY-2015		Auxiliary Fuel	7/28/2016 1715	250-mL Amber Boston Round	Cool, 4C	% Ash	Flammable, Handle w Care. #2 Fuel Oil	
PY-2016		Auxiliary Fuel	7/28/2016 1715	250-mL Amber Boston Round	Cool, 4C		Flammable, Handle w Care. #2 Fuel Oil	
PY-2017		Scrubber purge water	7/28/2016 1705	250-mL Amber Boston Round	Cool, 4C	% Ash		
PY-2018		Scrubber purge water	7/28/2016 1705	250-mL Amber Boston Round	Cool, 4C	% Ash		
PY-2023		Ash Spiking Solution	7/28/2016 1800	250-mL Amber Boston Round	Cool, 4C	Density		
PY-2024		Ash Spiking Solution	7/28/2016 1800	250-mL Amber Boston Round	Cool, 4C	Density		
PY-2025		Ash Spiking Solution	7/28/2016 1800	250-mL Amber Boston Round	Cool, 4C	% Ash	Use caution for %Ash, slowly drive off water. Critical measurement.	
PY-2026	·	Ash Spiking Solution	7/28/2016 1800	250-mL Amber Boston Round	Cool, 4C	% Ash	Use caution for %Ash, slowly drive off water. Critical measurement.	
PY-3001L,r PY-3001S -		Slurry Waste Feed (liquid and solid fractions)	7/29/2016 1525	1L WM Glass		Density, Moisture, Heat Content (Btu), Elemental Analysis (C,H,O,N,S)		
PY-3003L, (PY-3003S ×		Slurry Waste Feed (liquid and solid fractions)	7/29/2016 1525	250 ml. WM jar	Cool, 4C	% Ash	liquid amount. Report grams and mL of each separately as "S" (solid) and "L" (liquid).	
Y-3004B		Kiln Ash	7/29/2016 1545	120 mL WM jar	Cool, 4C	Density, Moisture Content		
Y-3007		Auxiliary Fuel	7/29/2016 1535	250-mL Amber Boston Round	Cool, 4C	Density, Heat Content (Btu)	Flammable, Handle w Care, #2 Fuel Oil	

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

216080044

REFERENCE COC NO.: T2-Slurry Only

PAGE _1_ OF __2
Bill To: CBI Federal Services

Project Name/No:	Picatinny Arsenal
Sample Team Member:	J. McGee, G. Britt, D. Jarvis, G. Ward
Project Manager	Reroni Halley

Purchase Order No.:

Required Report Date: Normal

Sample Shipment Date: 8/03/2016

Laboratory Destination: ALS-NY - HOLD

Laboratory Contact: Ancy Sebastian

Project Contact/Phone: Joyce McGee 865-850-7306

Carrier Waybill No.: Lab Courier

Report To: CBI Federal Services

Accounts Payable

Joyce McGee

2410 Cherahala Drive

Knoxville, TN 37932

Sample	Analytical	Sample Type/	Date/Time	Container	Pre-		Sample	Diamonal
Number	QC	Description	Collected	Туре	servative	Requested Testing Program	Notes / Expectations	Disposal
PY-4001L, PY-4001S		Slurry Waste Feed (liquid and solid fractions)	8/01/2016 1540	1L WM jar	Cool, 4C	Density, Moisture, Heat Content (Btu), Elemental Analysis (C,H,O,N,S)	Notes / Expectations	Record
PY-4002L PY-4002S			8/01/2016 1540	250 mL WM jar	Cool, 4C	Total Chlorine	Use caution in handling	
PY-4003L, PY-4003S		Slurry Waste Feed (liquid and solid fractions)	8/01/2016 1540	250-mL Amber Glass	Cool, 4C	% Ash	solid material - explosive propellant when dry. Sample will settle into solid/liquid phases. Weigh solid and measure	
PY-4004L		Slurry Waste Food (Solid and	8/01/2016	250 mL WM Poly	Cool, 4C	Metals and Hg	liquid amount. Report	
P Y 4004S		Aqueous Fractions)	1540			Weems allo 11g	grams and mL of each separately as "S" (solid) and "L" (liquid).	
PY-5001L, PY-5001S		Slurry Waste Feed (liquid and solid fractions)	8/02/2016 1325	1L WM jar	Cool, 4C	Density, Moisture, Heat Content (Btu), Elemental Analysis (C,H,O,N,S)	-	

Special Instructions:								
Possible Hazard Identif	ication:				Sample Disposal	:		
Non-haz:	Flammable: X	Poison B:	Unknown:	<u>X</u>	Return to Client:	Disposal by Lab:	X	Archive:
Turnaround Time:		Leve	l of QC Required:					
Normal: X_	Rush:	I	II	III.		Project Specific: X	(talk to A. Seba	ıstian)
1. Relinquished by:	J. McGee, CB&I Fee	deral Serveies Date	8 31/6	1. Receive	ed by:	0 / 1		3/AUG/16
	- IVIC	Time	: 1500]	gry l	Jayotell -	Time:	19:00
2. Relinquished by:	()	Date		2. Receive	d by:		Date: 9	8/4/16
		Time			Ten Sun		Time: /	7.
Comments: If samples	not received in good co	ondition contact Joyce Mc	Gee (865)-850-7306	immediate	ly.			

Reference COC Number: T2-Slurry Only

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD (Cont.)

PAGE _2_ OF ____2

Project Name/No.: Picatinny Arsenal

Laboratory Destination: ALS-NY - HOLD

Sample	Analy	Sample Type/	Date/Time	Container	Pre-		Sample	Dimensi
Number	QC	Description	Collected	Туре	servative	Requested Testing Program		Disposal
PY-5003L PY-5003S		Slurry Waste Feed (liquid and solid fractions)	8/02/2016 1325	250 mL WM jar	Cool, 4C	Total Chlorine	Notes / Expectations	Record
PY-5004L PY-5004S		Slurry Waste Feed (liquid and solid fractions)	8/02/2016 1325	250 mL WM jar	Cool, 4C	Total Chlorine		
PY-5005L, PY-5005S		Slurry Waste Feed (liquid and solid fractions)	8/02/2016 1325	250 mL WM jar	Cool, 4C	% Ash		
PY-5006L, PY-5006S		Slurry Waste Feed (liquid and solid fractions)	8/02/2016 1325	250 mL WM jar	Cool, 4C	% Ash		
PY-5007L	MS/MSD	Slurry Waste Feed (Solid and	8/02/2016	250-mL WM Poly	0-51 40			
PY-5007S		Aqueous Fractions)	1325	TOTAL IVINI POLY	Cool, 4C	Metals and Hg		
PY-6000L, PY-6000S		Slurry Waste Feed (liquid and solid fractions)	8/03/2016 1403	1L WM Glass	Cool, 4C	Density, Moisture, Heat Content (Btu), Elemental Analysis (C,H,O,N,S)	Use caution in handling solid material - explosive propellant when dry. Sample will settle into	
PY-6001L, PY-6001S		Slurry Waste Feed (liquid and solid fractions)	8/03/2016 1403	1L WM Glass	Cool, 4C	Density, Moisture, Heat Content (Btu), Elemental Analysis (C,H,O,N,S)	solid/liquid phases. Weigh solid and measure liquid amount. Report grams and mL of each separately as "S" (solid) and "L" (liquid).	
PY-6002L PY-6002S		Slurry Waste Feed (liquid and solid fractions)	8/03/2016 1403	250 mL WM jar	Cool, 4C	Total Chlorine		
PY-6003L, PY-6003S		Slurry Waste Feed (liquid and solid fractions)	8/03/2016 1403	250 mL WM jar	Cool, 4C	% Ash		
		•						
PY-6004L PY-6004S		Slurry Waste Feed (Solid and Aqueous Fractions)	8/03/2016 1403	-250-mL WM Poly	Coot, 4C	Metals and Hg		
				2//				

Check 1. Carrier: Client UPS FedEx US Mail Airborne Express Stericy 2. Cooler Temperature: 3. Shipping container/cooler received in good condition? 4. Sample containers received intact? 5. Custody seals intact on shipping container/cooler? 6. Custody seals intact on sample bottles? 7. Chain of custody present? If No, have second person check sample delivery group also. 8. Chain of custody signed - relinquished AND received? 9. Chain of custody agrees with sample labels? No extraneous or missing samples; all sampling into (sampler, Air Volumes, dates/time) 10. Samples received in proper containers including headspace requirements? 11. Do all Containers have sample in them? 12. Are all samples single phase? (e.g. no Oil and Water, no soilds > ≈1% in Liquid, etc.) 13. Analysis requirements clearly listed on COC? 14. Sufficient sample volume received for indicated tests? 15. All samples received within holding time/sufficient time to start analysis? Specify: vials (waters) MeOH jars Soil Kit EnCores 17. Water - pH acceptable upon receipt?	cle Courier Blue Ice Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye	Other:No Ice No N	O'Noile Date N/A N/A Init:
Check Ch	cle Courier Blue Ice Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye	Initials Other: No Ice No	Date
1. Carrier: Client UPS FedEx US Mail Airborne Express Stericy 2. Cooler Temperature: °C Specify presence of: Ice 3. Shipping container/cooler received in good condition? 4. Sample containers received intact? 5. Custody seals intact on shipping container/cooler? 6. Custody seals intact on sample bottles? 7. Chain of custody present? If No, have second person check sample delivery group also. 8. Chain of custody signed - relinquished AND received? 9. Chain of custody agrees with sample labels? No extraneous or missing samples; all sampling info (sampler, Air Volumes, dates/time) 10. Samples received in proper containers including headspace requirements? 11. Do all Containers have sample in them? 12. Are all samples single phase? (e.g. no Oil and Water, no soilds > ≈1% in Liquid, etc.) If No the P.M. needs to have instructions from the client on how to properly analyze the samples in the p.M. needs to have instructions from the client on how to properly analyze the samples. 13. Analysis requirements clearly listed on COC? 14. Sufficient sample volume received for indicated tests? 15. All samples received within holding time/sufficient time to start analysis? Specify: vials (waters) MeOH jars Soil Kit EnCores 17. Water - pH acceptable upon receipt?	ved by: cle Courier Blue Ice Yes Yes Yes Yes Yes Yes Yes Y	Initials Other:	Oate N/A N/A
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16. Volatile samples received within holding time/sufficient time to start analysis? Specify: vials (waters) MeOH jars Soil Kit EnCores 17. Water - pH acceptable upon receipt?	Yes	No	
Specify: vials (waters) MeOH jars Soil Kit EnCores 17. Vater - pH acceptable upon receipt?			
Specify: vials (waters) MeOH jars Soil Kit EnCores 17. Vater - pH acceptable upon receipt?	\ 163 /	No	
17. Water - pH acceptable upon receipt?	Yes		
The response much by the state of the state	Other:	No	(N/A)
Office of the Action is the detailed in the comments section below to	Van		
CIVE ACTION/Resolution /Determine union union, If a CAR is not initiated	res	No	NA
Corrective Action/Resolution (Reference CAR ID #):	xplain why.		
Client Notification (Regarding which item #s, Date & time, PSC Employee initials, Pers			
-, Just dume, PSC Employee initials, Per	son contacte	ed):	
Comments:			
			9
lo-i			
tericycle Use Only	100 mg		
ircle all applicable codes PM >24 >4pm SUB			
'QA Operations\SQP Original DOC Files'S, Not Job Sample receiving Policy and Procedures	COMP	UR	QA

Sample Receipt Checklist		
Work Order Number: R16080044	Stericycle, Ha	tfield, Pa
Client = ALS	Date/Time received:	1/18/16
LIMS data entry completed by: VO 8/19/16	Checklist completed by:	V-ONOULE
Initials Date 1 Carrier: Client UPS FedEx LICAGO	Reviewed by:	
US Wall Airborne Event	Stericycle Courier Oth	Data
2. Cooler Temperature: °C Specify presence of	A	
5. "pping container/cooler received in good condition?	-155 100 100	
4. Sample containers received intact?	Yes	No
5. Custody seals intact on shipping container/cooler?	Yes	No
6. Custody seals intact on sample bottles?	Yes	No N/A
7. Chain of custody present?	Yes	No N/A
If No, have second person check sample delivery group also.	Yes	No
6. Criair of custody signed - relinquished AND received?	Yes	No Init:
9. Chain of custody agrees with sample labeled	Yes	No
No extraneous or missing samples; all sampling into (samples)	Yes	No
	dates/limes, ete) matches	
sample in them?		No
12. Are all samples single phase? (e.g. no Oil and Water, no soilds > ≈1% in Liq	Yes	No
interest to have instructions from the all	luid, etc.) Yes	No
	ze the samples.	
14. Sufficient sample volume received for indicated have	Yes	No
13. All samples received within holding time/sufficient time to	Yes	No
16. Volatile samples received with zero headspace?	s? Yes	No
Specify: vials (waters) MeOH iara Callette	Yes	No (N/A)
17. Water - pH acceptable upon receive	Cores Other:	
Any response must be detailed in the	Yes	No N/A
Corrective Action/Resolution (Reference CAR ID #):	initiated, explain why.	The state of the s
Client Notification (Regarding which item #s, Date & time, PSC Employee in	tials Person contact to	
	indio, reison contacted):	
Comments:		
		18
Stericycle Use Only		
Circle all applicable PM >24		
- Julius	SUB COMP	UR QA
ToQA Operations\SOP Original DOC Files\S.\001_06_Sample_receiving_Policy_and_Precedures		



Internal Chain-of-Custody Records

STERICYCLE ENVIRONMENTAL SOLUTIONS

SOLUTIONS Hatfield, PA INTERNAL CHAIN OF CUSTODY

USE MILITARY TIME

	WHISTER TO STO	RAGE:	TIME:	BY:	
					Г
LAB SAMPLE ID	DATE/TIME REMOVED	ANALYSIS PERFORMED	DATE/TIME RETURNED	BY	USE ALI
216080012 &44	8-18-2016	Vaarious	N/A	VO/KK	Y/
			1071	VOIRE	Y/
					Y/
					Y/
					¥/
					Υ/
***					Υ/
					Y/
					Υ/
					Υ/
* **					Y /
					Y /
					Υ/
					Y /
					Y/
					Y /
					Υ/
					Υ/
					Υ/
					Y /
				- 1	Y /
					Υ/
					Y /
					Υ/
					Υ/
					Y /
					Υ/
					Y/
					Y/
					Y/
					Y / I



Physical Testing Case Narrative/ Non-Conformance Summary

Stericycle Environmental Solutions, Hatfield, PA Case Narrative/Non-Conformance Summary

Stericycle Work Order #: R16080012&44 Stericycle Sample Numbers #: 01A-24A

Analyst's Name: Vaughan O'Neill, Kyle Kushner

Run Date: 08/18/2016 Today's Date: 09/06/2016

The samples were prepared and analyzed for, according to criteria set forth in ASTM Method D3174, D4239, D5291, D5373, D5865, D482, D420

Physical Testing:

- Duplicate sample criteria for relative percent difference (RPD) met criteria.
- All Laboratory Control Sample recoveries met criteria.
- All calibration criteria were met.

Varyan O Wolle
Signature of Laboratory Technical Director



Certificate of Analytical Sample Results for All Parameters/Final Report



August 23, 2016

Ron Mcleod ALS 1435 NorJohn Court #1 Burlington, ON L7L 0E6

TEL: (905) 340-0824

FAX

RE: Picatinny Arsenal

Order No.: R16080012

Dear Ron Mcleod:

Stericycle Environmental Solutions received 16 samples on 8/8/2016 for the analyses presented in the following Certificate of Analytical Results.

The analyses and all data for associated QC met regulatory and/or laboratory specifications. Exceptions will be noted in an enclosed Case Narrative.

The results on the attached Certificate of Analytical results relate only to items tested or to the samples as received by the laboratory. This Certificate of Analytical Results shall not be reproduced, except in full, without the written approval of Stericycle Environmental Solutions, Hatfield, PA.

Please note that any unused portion of the samples will be disposed of 30 days following issuance of report, unless you have requested otherwise.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Vaughan O'Neill Project Manager



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Lab Order:

R16080012

Project:

Picatinny Arsenal

Analyses	A	As Received Basis	Dry Basis	Units	Method	Date	Analyst
PY-1001S-Sh	urry Waste	Feed					
Lab ID:	R16080012	2-01A					
Date Sampled:	07/27/2016	Date Receiv	ved: 08/08/20	16	Matrix: SO	LID	
PERCENT MOIS	TURE						
Moisture, Total		33.2		%	D 2216	09-Aug-16	VJO
ASH, COAL							
Ash		< 0.0100		%	D3174	16-Aug-16	KKUS
CARBON, HYDR (COAL)	ROGEN, NITRO	OGEN, OXYGEN					
Carbon		16,4	24.6	%	D5291/537	22-Aug-16	KKUS
Hydrogen (Excl. I	H in Moisture)	2.93	4.39	%			
Hydrogen (Incl. H	l in Moisture)	6.64		%			
Nitrogen		15.4	23.1	%			
Oxygen (Excl. O	in Moisture)	32.0	47.9	%			
Oxygen (Incl. O in	n Moisture)	61.5		%			
HEATING VALUE	E, COAL						
Heating Value		2610	3,910	Btu/ib	D5865	22-Aug-16	KKUS
SULFUR							

PY-1003S	Slurry V	Vaste	Feed
111674			

Lab ID:

Sulfur

R16080012-03A

Date Sampled:

07/27/2016

Date Received: 08/08/2016

Matrix: SOLID

D4239

ASH, COAL

Ash

< 0.0100

< 0.0100

% D3174

16-Aug-16

16-Aug-16

KKUS

KKUS

< Indicates less than the limit of quantitation

H - Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT: ALS

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Lab Order:

R16080012

Project:

Picatinny Arsenal

Analyses	As Re	eceived Basis	Dry Basis	Units	Method	Date	Analyst
PY-2001S Sh	ırry Waste Fee	d					
Lab ID:	R16080012-05	OD-C					
Date Sampled:	07/28/2016	Date Receiv	red: 08/08/201	16	Matrix: SO	LID	
PERCENT MOIS	TURE						
Moisture, Total	4	39.9		%	D 2216	09-Aug-16	VJO
ASH, COAL							
Ash		< 0.0100		%	D3174	16-Aug-16	KKUS
CARRON IIVE	OOFN WITHOUT						111100
COAL)	ROGEN, NITROGE	N, OXYGEN					
Carbon		20.7	34.4	%	D5291/537	22-Aug-16	KKUS
Hydrogen (Excl. I	H in Moisture)	1.88	3.13	%	2023 (700)	LL / lug 10	MOO
Hydrogen (Incl. H	l in Moisture)	6.35		%			
Nitrogen		14.0	23.3	%			
Oxygen (Excl. O	in Moisture)	23.6	39.3	%			
Oxygen (Incl. O in	Moisture)	59.0		%			
HEATING VALUE	E, COAL						
Heating Value		2930	4,880	Btu/lb	D5865	22-Aug-16	KKUS
SULFUR							

< Indicates less than the limit of quantitation

H - Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Lab Order:

R16080012

Project:

Picatinny Arsenal

Analyses	As Received Basis	Dry Basis	Units	Method	Date	Analyst
PY-2002S Slurry Was	te Feed					
Lab ID: R160800						
Date Sampled: 07/28/20	Date Receiv	red: 08/08/20	16	Matrix: SO	LID	
PERCENT MOISTURE						
Moisture, Total	26.0		%	D 2216	09-Aug-16	VJO
ACH COAL						,,,,
ASH, COAL Ash	< 0.0100		%	D0174	40.4	
TON	V 0.0100		70	D3174	16-Aug-16	KKUS
CARBON, HYDROGEN, NIT	ROGEN, OXYGEN					
(COAL)						
Carbon	20.5	27.7	%	D5291/537	22-Aug-16	KKUS
Hydrogen (Excl. H in Moisture)	2.76	3.73	%			
Hydrogen (Incl. H in Moisture)	5.67		%			
Nitrogen	18.5	25.0	%			
Oxygen (Excl. O in Moisture)	32.3	43.6	%			
Oxygen (Incl. O in Moisture)	55.4		%			
HEATING VALUE, COAL						
Heating Value	2820	3,810	Btu/lb	D5865	22-Aug-16	KKUS
SULFUR						

$\mathbf{P}\mathbf{Y}$	-2005S	Slurry '	Waste Feed	l

Lab ID:

Sulfur

R16080012-09A

Date Sampled:

07/28/2016

Date Received: 08/08/2016

Matrix: SOLID

D4239

ASH, COAL

Ash

< 0.0100

< 0.0100

% D3174

%

16-Aug-16

16-Aug-16

4

KKUS

KKUS

< Indicates less than the limit of quantitation

H - Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Lab Order:

R16080012

Lab Order:	R16080012						
Project:	Picatinny Arsenal						
Analyses	As Rec	eived Basis]	Dry Basis	Units	Method	Date	Analyst
PY-2006S Slu	ırry Waste Feed						
Lab ID:	R16080012-11A						
Date Sampled:	07/27/2016	Date Received	: 08/08/201	6	Matrix: SO	LID	
ASH, COAL							
Ash		0.130	0	%	D3174	16-Aug-16	KKUS
					50174	10-Aug-10	RROS
PY-3001S Sh	rry Waste Feed						
ab ID:	R16080012-13A						
Date Sampled:	07/29/2016	Date Received	: 08/08/201	6	Matrix: SO	I ID	
PERCENT MOIS			- 50/00/201		Matin. 50.	LIU	
Moisture, Total	TORE	32.7		%	D 2216	00:4: 40	V10
		OZ.7		70	D 2216	09-Aug-16	VJO
ASH, COAL							
Ash		< 0.0100		%	D3174	16-Aug-16	KKUS
	OGEN, NITROGEN,	OXYGEN					
COAL)							
Carbon	I in Malatura)	21.7	32.2	%	D5291/537	22-Aug-16	KKUS
Hydrogen (Excl. H Hydrogen (Incl. H	•	2.24	3.33	%			
Nitrogen	in Moisture)	5.90 16.1	23.9	% %			
Oxygen (Excl. O i	n Moisture)	27.2	40.4	% %			
Oxygen (Incl. O in		56.2	10.1	%			
Heating Value	=, COAL			1112			
Heating Value		2650	3,940	Btu/lb	D5865	22-Aug-16	KKUS
ULFUR							
51 1 5 11							

< Indicates less than the limit of quantitation

H - Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Lab Order:

R16080012

Project:

Picatinny Arsenal

Analyses

As Received Basis

Dry Basis

Units

Method

Date

Analyst

PY-3003S Slurry Waste Feed

Lab ID:

R16080012-15A

07/29/2016

Date Received: 08/08/2016

Matrix: SOLID

Date Sampled: ASH, COAL

Ash

< 0.0100

%

D3174

16-Aug-16

KKUS



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

Lab Order:

R16080012

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID: Client Sample ID:	R16080012-02 PY-1001L-Slurr		ed: 08/08/2016	Date Sampled: Matrix:		
Analyses		Result	Limit Qual	Units	DF	Date Analyzed
ASH, OIL			D482			Analyst: KKUS
Ash		< 0.0100	0.0100	%	1	8/15/2016
CARBON, HYDROC	GEN, NITROGEN ((OIL)	D5291			Analyst: KKUS
Carbon		1.70	0.01	%	1	8/22/2016
Hydrogen		11.6	0.01	%	1	8/22/2016
Nitrogen		0.72	0.01	%	1_	8/22/2016
HEATING VALUE B	TU/LB		D240			Analyst: KKUS
Heating Value		140	50	Btu/lb	1	8/22/2016
OXYGEN BY DIFFE	RENCE		D5291			Analyst: KKUS
Oxygen		86.0	0.0100	%	1	8/22/2016
SULFUR			D1552			Analyst: KKUS
Sulfur		< 0.0100	0.0100	%	1	8/16/2016
Lab ID:	R16080012-04	Date Receive	ed: 08/08/2016	Date Sampled:	07/27/	2016 19:53
Client Sample ID:	PY-1003L Slurry	Waste Feed		Matrix:		
Analyses		Result	Limit Qual	Units	DF	Date Analyzed
ASH, OIL			D482			Analyst: KKUS
Ash		< 0.0100	0.0100	%	1	8/15/2016

22

Qualifiers:

BRL - Below Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

N - Tentatively identified compound based on mass spectral library search

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

H - Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

Lab Order:

R16080012

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID: R160 Client Sample ID: PY-2		ed:08/08/2016			07/28/2016 17:00 AQUEOUS		
Analyses	Result	Limit Qua	l Units	DF	Date Analyzed		
ASH, OIL		D482			Analyst: KKUS		
Ash	< 0.0100	0.0100	%	1	8/15/2016		
CARBON, HYDROGEN, N	IITROGEN (OIL)	D5291			Analyst: KKUS		
Carbon	0.41	0.01	%	1	8/22/2016		
Hydrogen	11.3	0.01	%	1	8/22/2016		
Nitrogen	0.67	0.01	%	1	8/22/2016		
HEATING VALUE BTU/LE	3	D240			Analyst: KKUS		
Heating Value	100	50	Btu/lb	1	8/22/2016		
OXYGEN BY DIFFERENC	E	D5291			Analyst: KKUS		
Oxygen	87.6	0.0100	%	1	8/22/2016		
SULFUR		D1552			Analyst: KKUS		
Sulfur	< 0.0100	0.0100	%	1	8/16/2016		

23

Qualifiers:

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

Lab Order:

R16080012

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID: Client Sample ID:	R16080012-08 PY-2002L Slurry		ed: 08/08/2016	Date Sampled: Matrix:		
Analyses		Result	Limit Qual		DF	Date Analyzed
ASH, OIL			D482			Analyst: KKU
Ash		< 0.0100	0.0100	%	1	8/15/2016
CARBON, HYDROG	SEN, NITROGEN ((OIL)	D5291			Analyst: KKU :
Carbon		0.42	0.01	%	1	8/22/2016
Hydrogen		11.5	0.01	%	1	8/22/2016
Nitrogen		0.74	0.01	%	1	8/22/2016
HEATING VALUE B	TU/LB		D240			Analyst: KKU
Heating Value		50	50	Btu/lb	1	8/22/2016
OXYGEN BY DIFFE	RENCE		D5291			Analyst: KKU :
Oxygen		87.3	0.0100	%	1	8/22/2016
SULFUR			D1552			Analyst: KKU \$
Sulfur		< 0.0100	0.0100	%	1	8/16/2016
Lab ID:	R16080012-10	Date Receive	ed: 08/08/2016	Date Sampled:	07/28/2	2016 17:00
Client Sample ID:	PY-2005L Slurry	Waste Feed		Matrix:		
Analyses		Result	Limit Qual	Units	DF	Date Analyzed
ASH, OIL			D482			Analyst: KKUS
Ash		< 0.0100	0.0100	%	1	8/15/2016

24

Qualifiers:

BRL - Below Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

N - Tentatively identified compound based on mass spectral library search

- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT: ALS

> 1435 NorJohn Court #1 Burlington, ON L7L 0E6

Lab Order:

R16080012

Lab ID: Client Sample ID:	R16080012-12 PY-2006L Slurry	Date Receive y Waste Feed	ed: 08/08/201	6	Date Sampled: Matrix:		
Analyses		Result	Limit	Qual	Units	DF	Date Analyzed
ASH, OIL Ash		< 0.0100	D482 0.0100		%	1	Analyst: KKU 8/15/2016
Lab ID: Client Sample ID:	R16080012-14 PY-3001L Slurry	Date Receive Waste Feed	e d: 08/08/201	6	Date Sampled: Matrix:		
Analyses		Result	Limit	Qual	Units	DF	Date Analyzed
ASH, OIL			D482				Analyst: KKUS
Ash		< 0.0100	0.0100		%	1	8/15/2016
CARBON, HYDROG	SEN, NITROGEN (OIL)	D5291				Analyst: KKU \$
Carbon		0.40	0.01		%	1	8/22/2016
Hydrogen		11.3	0.01		%	1	8/22/2016
Nitrogen		0.72	0.01		%	1	8/22/2016
HEATING VALUE B	ITU/LB		D240				Analyst: KKU \$
Heating Value		< 50.000	50		Btu/ib	1	8/22/2016
OXYGEN BY DIFFE	RENCE		D5291				Analyst: KKUS
Oxygen		87.6	0.0100		%	1	8/22/2016

D1552

0.0100

< 0.0100

25

8/16/2016

Analyst: KKUS

Qualifiers:

SULFUR

Sulfur

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

Lab Order:

R16080012

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Client Sample ID: PY-3003L Slurry Waste Feed

Lab ID:

R16080012-16 Date Received: 08/08/2016

Date Sampled: 07/29/2016 15:25

Matrix: AQUEOUS

Analyses

Result

< 0.0100

Limit Qual Units

DF

Date Analyzed

ASH, OIL Ash D482

0.0100

0/_

1

Analyst: **KKUS** 8/15/2016

26

Qualifiers:

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

Lab Order:

R16080012

CLIENT:

ALS

1435 NorJohn Court #1

Burlington, ON L7L 0E6

Project:

Lab ID:

Picatinny Arsenal

R16080012-02 Date Received: 08/08/2016 Date Sampled: 07/27/2016 19:53

Client Sample ID:	PY-1001L-Slurr	y Waste Feed			Matrix:	: AQUEOUS		
Analyses		Result	Limit	Qual	Units	DF	Date Analyzed	
ASH, OIL			D482				Analyst: KKUS	
Ash		< 0.0100	0.0100		%	1	8/15/2016	
CARBON, HYDRO	GEN, NITROGEN	(OIL)	D5291				Analyst: KKUS	
Carbon		1.70	0.01		%	1	8/22/2016	
Hydrogen		11.6	0.01		%	1	8/22/2016	
Nitrogen		0.72	0.01		%	1	8/22/2016	
HEATING VALUE E	STU/LB		D240				Analyst: KKUS	
Heating Value		140	50		Btu/lb	-1	8/22/2016	
OXYGEN BY DIFFE	RENCE		D5291				Analyst: KKUS	
Oxygen		86.0	0.0100		%	1	8/22/2016	
SULFUR			D1552				Analyst: KKUS	
Sulfur		< 0.0100	0.0100		%	1	8/16/2016	
Lab ID:	R16080012-04	Date Receive	ed: 08/08/2016	5	Date Sampled:	07/27/2	2016 19:53	
Client Sample ID:	PY-1003L Slurry	y Waste Feed			Matrix:			
Analyses		Result	Limit	Qual	Units	DF	Date Analyzed	
ASH, OIL			D482				Analyst: KKUS	
Ash		< 0.0100	0.0100		%	1	8/15/2016	

27

Qualifiers:

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

Lab Order:

R16080012

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID: R16080012-06 Da Client Sample ID: PY-2001L Slurry Wa		ed: 08/08/2016	6	Date Sampled: Matrix:		
Analyses	Result	Limit	Qual		DF	Date Analyzed
ASH, OIL		D482				Analyst: KKUS
Ash	< 0.0100	0.0100		%	1	8/15/2016
CARBON, HYDROGEN, NITROGEN (OIL)		D5291				Analyst: KKUS
Carbon	0.41	0.01		%	1	8/22/2016
Hydrogen	11.3	0.01		%	1	8/22/2016
Nitrogen	0.67	0.01		%	1	8/22/2016
HEATING VALUE BTU/LB		D240				Analyst: KKUS
Heating Value	100	50		Btu/lb	1	8/22/2016
OXYGEN BY DIFFERENCE		D5291				Analyst: KKUS
Oxygen	87.6	0.0100		%	1	8/22/2016
SULFUR		D1552				Analyst: KKUS
Sulfur	< 0.0100	0.0100		%	1	8/16/2016

28

Qualifiers:

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

Lab Order:

R16080012

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID: Client Sample ID:	R16080012-08 PY-2002L Slurry		ed:08/08/2016	Date Sampled: Matrix:		
Analyses		Result	Limit Qual		DF	Date Analyzed
ASH, OIL			D482			Analyst: KKUS
Ash		< 0.0100	0.0100	%	1	8/15/2016
CARBON, HYDROC	BEN, NITROGEN ((OIL)	D5291			Analyst: KKUS
Carbon		0.42	0.01	%	1	8/22/2016
Hydrogen		11.5	0.01	%	1	8/22/2016
Nitrogen		0.74	0.01	%	1	8/22/2016
HEATING VALUE B	TU/LB		D240			Analyst: KKU S
Heating Value		50	50	Btu/lb	1	8/22/2016
OXYGEN BY DIFFE	RENCE		D5291			Analyst: KKUS
Oxygen		87.3	0.0100	%	1	8/22/2016
SULFUR			D1552			Analyst: KKUS
Sulfur		< 0.0100	0.0100	%	1	8/16/2016
ab ID:	R16080012-10	Date Receive	ed: 08/08/2016	Date Sampled:	07/28/2	2016 17:00
Client Sample ID:	PY-2005L Slurry	Waste Feed		Matrix:		
Analyses		Result	Limit Qual	Units	DF	Date Analyzed
ASH, OIL			D482			Analyst: KKUS
Ash		< 0.0100	0.0100	%	1	8/15/2016

29

Qualifiers:

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

Lab Order:

R16080012

CLIENT:

ALS

1435 NorJohn Court #1

Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID: R16080012-12 Date Received: 08/08/2016 Date Sampled: 07/28/2016 17:00

Client Sample ID: PY-2006L Slurry Waste Feed Matrix: AQUEOUS

Analyses Result Limit Qual Units DF Date Analyzed

ASH, OIL D482 Analyst: KKUS
Ash < 0.0100 0.0100 % 1 8/15/2016

Ash < 0.0100 0.0100 % 1 8/15/2016

Lab ID: R16080012-14 Date Received: 08/08/2016 Date Sampled: 07/29/2016 15:25

Client Sample ID: PY-3001L Slurry Waste Feed Matrix: AQUEOUS

Analyses Result Limit Qual Units DF **Date Analyzed** ASH, OIL **D482** Analyst: KKUS Ash < 0.0100 0.0100 8/15/2016 1 **CARBON, HYDROGEN, NITROGEN (OIL)** D5291 Analyst: KKUS 0.40 0.01 % 1 8/22/2016 Hydrogen 11.3 0.01 8/22/2016 Nitrogen 0.72 0.01 8/22/2016 **HEATING VALUE BTU/LB** D240 Analyst: KKUS Heating Value < 50.000 50 Btu/lb 8/22/2016 **OXYGEN BY DIFFERENCE** D5291 Analyst: KKUS Oxygen 87.6 0.0100 8/22/2016

D1552

< 0.0100 0.0100 % 1 8/16/2016

30

Qualifiers:

SULFUR

Sulfur

BRL - Below Reporting Limit

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance

Analyst: KKUS



Certificate of Analytical Results

Date: 23-Aug-16

Lab Order:

CLIENT:

ALS

1435 NorJohn Court #1

Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID:

R16080012-16 Date Received: 08/08/2016

Date Sampled: 07/29/2016 15:25

Client Sample ID: PY-3003L Slurry Waste Feed

Matrix: AQUEOUS

Analyses

Result

< 0.0100

Limit Qual Units

DF

Date Analyzed

R16080012

ASH, OIL **Ash**

D482

0.0100

Analyst: KKUS 8/15/2016

Qualifiers:

BRL - Below Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

N - Tentatively identified compound based on mass spectral library search

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

H - Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

CLIENT:

ALS

Lab Order:

R16080012

1435 NorJohn Court #1 Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID:	R16080012-01	Date Receiv	ed: 08/08/20	16	Date Sampled:	07/27/2	016 19:53
Client Sample ID:	PY-1001S-Slurry	y Waste Feed				SOLID	
Analyses		Result	Limit	Qual	Units	DF	Date Analyzed
GRAVITY Density		10.76	D1298 0.001000		lbs/gal	1	Analyst: KKU : 8/17/2016
Lab ID:	R16080012-02	Date Receive	ed: 08/08/201	6	Date Sampled:	07/27/2	016 19:53
Client Sample ID:	PY-1001L-Slurry	y Waste Feed				AQUEC	
Analyses		Result	Limit	Qual	Units	DF	Date Analyzed
GRAVITY Density	,	8.470	D1298 0.001000		lbs/gal	1	Analyst: KKU : 8/17/2016
Lab ID:	R16080012-05	Date Receive	ed: 08/08/201	6	Date Sampled:	07/28/20	016 17:00
Client Sample ID:	PY-2001S Slurry	Waste Feed			Matrix:		
Analyses		Result	Limit	Qual	Units	DF	Date Analyzed
GRAVITY Density		6.510	D1298 0.001000		lbs/gal	1	Analyst: KKU \$ 8/17/2016
Lab ID:	R16080012-06	Date Receive	ed: 08/08/201	6	Date Sampled:	07/28/20	016 17:00
Client Sample ID:	PY-2001L Slurry	Waste Feed				AQUEC	
Analyses		Result	Limit	Qual	Units	DF	Date Analyzed
GRAVITY Density		8.470	D1298 0.001000		lbs/gal	1	Analyst: KKUS 8/17/2016

32

Qualifiers:

BRL - Below Reporting Limit

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance



Certificate of Analytical Results

Date: 23-Aug-16

Lab Order:

CLIENT:

ALS

1435 NorJohn Court #1

Burlington, ON L7L 0E6

Project:

Picatinny Arsenal

Lab ID:

R16080012-07 Date Received: 08/08/2016

Date Sampled: 07/28/2016 17:00

Client Sample ID:

PY-2002S Slurry Waste Feed

Matrix: SOLID

Analyses

Result

Limit Qual Units

DF

Date Analyzed

R16080012

GRAVITY Density

8.680

D1298

0.001000

lbs/gal

Analyst: KKUS 8/17/2016

Lab ID:

R16080012-08

Date Received: 08/08/2016

Date Sampled: 07/28/2016 17:00

Client Sample ID: PY-2002L Slurry Waste Feed

Matrix: AOUEOUS

Analyses

Result

Limit Qual Units

DF

Date Analyzed

GRAVITY **Density**

8.430

D1298

0.001000

lbs/gal

1

Analyst: KKUS 8/17/2016

Lab ID:

R16080012-13 Date Received: 08/08/2016

Date Sampled: 07/29/2016 15:25

Client Sample ID: PY-3001S Slurry Waste Feed

Matrix: SOLID

Analyses

Result

Limit Qual Units

DF

Date Analyzed

GRAVITY Density

7.590

0.001000

D1298

ibs/gal

8/17/2016

1

Analyst: KKUS

Lab ID:

R16080012-14 Date Received: 08/08/2016

Date Sampled: 07/29/2016 15:25

Client Sample ID: PY-3001L Slurry Waste Feed

Matrix: AQUEOUS

Analyses

Result

Limit Qual Units

DF **Date Analyzed**

GRAVITY Density

8.430

D1298 0.001000

lbs/gal

Analyst: KKUS

1 8/17/2016

Qualifiers:

- J Analyte detected below quantitation limits
- B Analyte detected in the associated Method Blank
- * Value exceeds Maximum Contaminant Level
- N Tentatively identified compound based on mass spectral library search
- S Spike Recovery outside accepted recovery limits
- R RPD outside accepted recovery limits
- E Value above quantitation range
- H Hold Time excedance

Stericycle Environmental Solutions

Date: 23-Aug-16

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C.	u.			•

ALS

Project:

Picatinny Arsenal

Lab Order:

R16080012

CASE NARRATIVE

ID#	Total Vol (mls)	ID#	Total (grams)
PY1001L	500	PY1001S	63.5
PY1003L	135	PY1003S	19.5
Py2001L	640	PY2001S	80.0
PY2002L	645	PY2002S	56.5
PY2005L	205	PY2005S	29.5
PY2006L	275	PY2006S	37.5
PY3001L	500	PY3001S	46.0
PY3003L	300	PY3003S	26.5
PY1002L	150	PY1002S	9.5
PY2003L	200	Py2003S	25.5
PY2004L	260	PY2004S	49.0
PY3002L	140	PY3002S	48.5